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METHOD USING LASER SHOCK PROCESSING TO PROVIDE IMPROVED RESIDUAL STRESS PROFILE CHARACTERISTICS

CONTINUATION DATA

The present application is a divisional application and hereby claims the benefit under Title 35, United States Code, §120, of United States Patent Application No. 10/207,560 filed on July 29, 2002. now U.S.P.N. 6,664,506

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BACKGROUND OF THE INVENTION

1. Field of the invention.

The present invention relates generally to laser shock peening techniques, and, more particularly, to processing methods employing various laser shock peening procedures to enhance the deep compressive residual stress characteristics induced by laser shock peening and to selectively modify in a controlled manner the compressive residual stress distribution profile developed in a processed workpiece, such as an airfoil.

2. Description of the related art.

Laser shock processing has found use in applications involving the enhancement of certain structural features such as the leading and trailing edges of turbine engine compressor or other airfoils. Various strategies have focused upon finding adequate laser beam spot patterns to process the airfoil. However, little attention has been given to determining useful